

REMARKS

The Office Action rejected claims 1-40 under 35 U.S.C. § 102(b) as being anticipated by Davis et al. (US 5,820,554, hereinafter "Davis"). The Office Action also rejected, under 35 U.S.C. § 103(a), claims 1-40 as being unpatentable over Terwilliger (US 5,766,135) in view of Davis. During the teleconference of April 8, the Examiner also objected to the recitation of two surfaces in the claimed slot. Applicants have cancelled the claims and added new claims 41-81 to more clearly define the claimed slot. Therefore, it is respectfully submitted that these amendments do not require a new search because they relate to the same slots.

Claim Rejections Under 102

Independent claim 41 recites a plurality of elongate slots wherein a portion of at least one slot extends along a straight line axis. Similarly, independent claim 62 recites a plurality of elongate slots wherein the bottom portion of at least one slot extends along a straight line axis. Davis does not disclose this language of claims 41 and 62.

FIG. 4B of the Application is reproduced below, to aid in clarifying the differences between Davis and the claims:

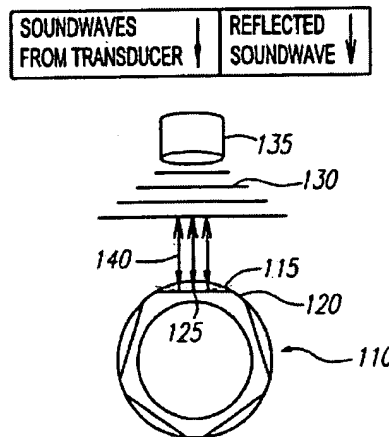
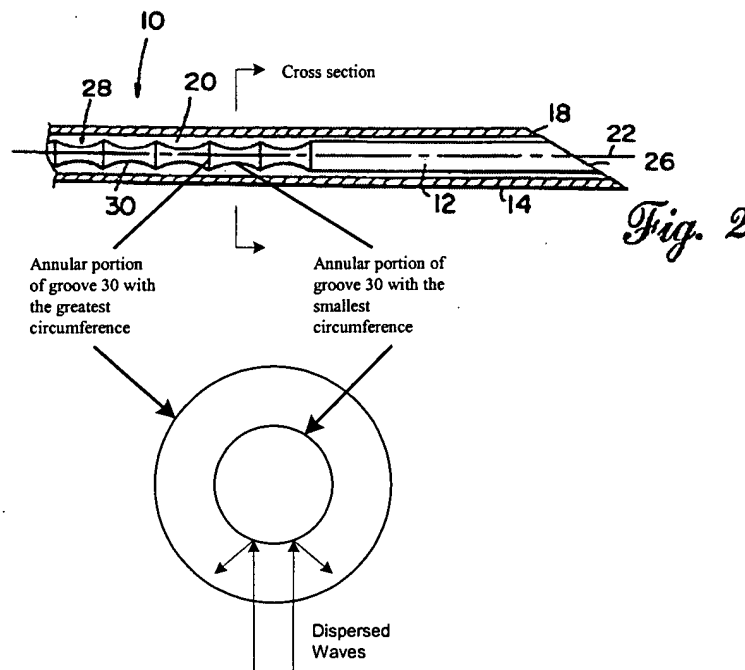


FIG. 4B

FIG. 4B depicts a radial cross sectional view of one exemplary embodiment of the medical device 110 having a plurality of slots 115. Here, one of the slots 115 at the top of the figure is shown extending along a straight line axis. In this case, the slot 115 extends along a straight line

axis perpendicular to the direction of the sound waves emitted by the transducer. The slot 115 can then reflect the sound waves back to the transducer without the undesirable echo dispersement common to the curved surfaces of the prior art (see FIG. 3B and pp. 2-3, ¶6 of the application).

The embodiment depicted in FIG. 4B can then be compared with the device in Davis, shown below:



Radial Cross Section of Annular Groove 30 in Davis

The upper figure is a reproduction of FIG. 2 from Davis, showing an axial cross section of the device 10 and curved annular grooves 30. Here, it can be seen that the groove 30 is entirely curved and does not extend along a straight line axis. The lower figure is a radial cross section of the device 10 taken along the center of one of the annular grooves 30. This radial cross section of the device 10 also shows that groove 30 is entirely curved (col. 2, ll. 33-37, 56-59; "a plurality of adjacent shallow concave annular grooves 30 circumscribe the outer surface of the stylet 12" col. 4, ll. 29-30). From these cross sectional views, it is apparent that the groove 30 of Davis extends along a curved axis. Echoes generated by the reflection of sound waves from the surface of groove 30 will be dispersed in every direction, for instance, as indicated by the arrows in the

lower figure. No portion of the groove 30 extends along a straight line axis. Davis, therefore, discloses the same undesirable curved surface of the prior art. Because Davis fails to disclose the slot as recited in claims 41 and 62, the Applicants respectfully request that the rejection to these claims be withdrawn.

Claim Rejections Under 103

Claims 41 and 62 recite “a plurality of elongate slots formed on the elongate body.” Terwilliger fails to teach, suggest or disclose this. Instead, Terwilliger discloses a hole 2 machined through the medical device, i.e., a through-hole (see FIGs. 1-13; col. 3, ll. 12-17; col. 4, line 36 “hole 5 is drilled through cannula 7”). The through-hole cannula of Terwilliger is not comparable to the slotted device as recited in claims 41 and 62. Beyond the obvious structural differences, the slotted device has the capability to reflect waves even when the device is rotated. Conversely, because the through-hole in Terwilliger passes entirely through the cannula (FIG. 5, col. 4, ll. 35-38), if the device is rotated, any waves directed at the device can pass through the device without any reflection at all. Thus, the through-hole actually decreases the echogenicity of the device, i.e., the through-hole makes the medical device invisible to the imager when the device is not held at the proper orientation. Therefore, the device in Terwilliger is not comparable to the slotted device as recited in claims 41 and 62.

Furthermore, the disclosures in Davis and Terwilliger are not combinable because Davis and Terwilliger teach away from each other. First, Davis teaches a plurality of annular grooves 30, which can extend radially around the entire circumference of the device (see Fig. 2). The purpose of these annular grooves 30 is to allow enhanced echogenicity at any radial orientation of the device, i.e., because the grooves 30 circumscribe the device (col. 4, ll. 29-30), rotation of the device while in the body will not have an effect on imaging the device. Conversely, Terwilliger requires that the cannula 7 be held at a specific radial orientation with respect to the imager. The through-hole is placed perpendicular to and off line from the centerline 6 in order to expose a surface 11 of the through-hole to the imager (col. 3, ll. 12-17). This exposed surface 11 only reflects sound waves when the cannula 7 has a radial orientation that places the surface 11 both directly perpendicular to the imager and adjacent to the imager. Thus, to maintain echogenicity, Terwilliger teaches a device that cannot be rotated. Likewise, the combination of Terwilliger

with Davis would also require that the device in Davis not be rotated. This combination would defeat the purpose of the annular grooves 30 of Davis and would render the device in Davis inoperable for its intended purpose.

Second, as pointed out above, since Terwilliger teaches a through-hole, one of skill in the art would not be motivated to combine Davis with Terwilliger because any rotation of the device, e.g., by 90 degrees, would allow the waves to pass through the device and decrease the echogenicity of the device. In addition, because the through-hole compromises the integrity of the device, one of skill in the art would be further motivated not to combine Davis with Terwilliger. For these reasons, the Applicants respectfully request the rejection to claims 41 and 62 be withdrawn.

Conclusion

The Applicants respectfully submit that independent claims 41 and 62 are in condition for allowance. Because claims 42-61 and 63-81 depend from allowable independent claims, the Applicants respectfully submit that these claims are in like condition for allowance. In light of the above remarks, the Applicants respectfully request reconsideration and allowance of the application. If the Examiner has any questions or comments, the Examiner is invited to call the undersigned at (949) 567-6700.

The Commissioner is authorized to charge Counsel's Deposit Account No. 150665 for the necessary fees, and is authorized to charge any additional fees that may be required and to credit any overpayments to said Deposit Account 150665.

Respectfully submitted,

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